IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A decoder for an automatic speech recognition system for determining one or more candidate text unit concatenations according to a predetermined criterion and which correspond to a speech segment, the decoder comprising:

a processor arranged to receive a sequence of feature vectors corresponding to the speech segment;

the processor arranged to map with different likelihood values the feature vectors to sequences of nodes in a decoding network, every sequence representing a concatenation of text units;

the processor arranged to determine one or more candidate node sequences in the decoding network corresponding to the candidate text unit concatenations by implementing a dynamic programming token passing algorithm in which each token corresponds to a node and is associated with a number of text unit concatenations and likelihood values for these concatenations, wherein the plurality of candidate text unit concatenations in a token are the text unit concatenations with [[the]] N-best likelihood values;

tokens from different nodes that are to be passed to a common node are combined to generate a new token corresponding to the common node, said new token including a pointer to a word history structure that includes

pointers to text unit concatenations from previous tokens of different nodes, and

offsets indicating a difference in maximum likelihood scores between the text unit concatenations from the previous tokens; and

the processor is further configured to delay a merging of the text unit concatenations in the new token to determine the N-best likelihood values until an end of the speech segment

and output the one or more candidate text unit concatenations corresponding to the speech segment.

Claim 2 (Currently Amended): A decoder according to claim 1 wherein the processor is further arranged to merge said new token ~~having said identifier~~, the text unit concatenations of said previous tokens being associated with said merged token dependent on their corresponding likelihood values.

Claim 3 (Currently Amended): A decoder according to claim 2 wherein said merging is only delayed if the new token has a likelihood value below a delay-merge threshold.

Claim 4 (Original): A decoder according to claim 1 wherein the processor is further arranged to prune tokens having likelihood values below a prune threshold.

Claim 5 (Canceled).

Claim 6 (Previously Presented): A decoder according to claim 1 wherein the tokens are additionally associated with a number of category markers each corresponding to said text unit concatenation, each category marker being associated with one of a plurality of categories, such that the plurality of candidate text unit concatenations in a token are the text unit concatenations with the best likelihood values in said plurality of categories.

Claim 7 (Original): A decoder according to claim 6 wherein the plurality of candidate text unit concatenations are the text unit concatenations with the N-best likelihood values in each said category.

Claim 8 (Original): A decoder according to claim 1 wherein the multiple text unit concatenations associated with each token are used to allow a statistical language model score to be added to the likelihood values associated with said text unit concatenations.

Claim 9 (Original): A decoder according to claim 1 wherein the dynamic programming token passing algorithm is a Viterbi algorithm.

Claim 10 (Original): A decoder according claim 1 wherein the dynamic programming token passing algorithm is a Baum-Welch algorithm.

Claim 11 (Original): A decoder according to claim 1 wherein the tokens and the text unit concatenations are stored in logically separate memories, and wherein a logically separate list data-structure is used to associate tokens with their text unit concatenations or identifiers and corresponding likelihood values.

Claim 12 (Previously Presented): A decoder according to claim 1 wherein the processor is further arranged to map using an acoustic model based on Hidden Markov Models.

Claim 13 (Currently Amended): An automatic speech recognition system comprising a decoder for determining one or more candidate text unit concatenations according to a predetermined criterion and which correspond to a speech segment, the decoder comprising:

a processor arranged to receive a sequence of feature vectors corresponding to the speech segment;

the processor arranged to map with different likelihood values the feature vectors to sequences of nodes in a decoding network, every sequence representing a concatenation of text units;

the processor arranged to determine one or more candidate node sequences in the decoding network corresponding to the candidate text unit concatenations by implementing a dynamic programming token passing algorithm in which each token corresponds to a node and is associated with a number of text unit concatenations and likelihood values for these concatenations, wherein the plurality of candidate text unit concatenations in a token are the text unit concatenations with [[the]] N-best likelihood values;

tokens from different nodes that are to be passed to a common node are combined to generate a new token corresponding to the common node, said new token including a pointer to a word history structure that includes

pointers to text unit concatenations from previous tokens of different nodes, and

offsets indicating a difference in maximum likelihood scores between the text unit concatenations from the previous tokens; and

the processor is further configured to delay a merging of the text unit concatenations in the new token to determine the N-best likelihood values until an end of the speech segment and output the one or more candidate text unit concatenations corresponding to the speech segment.

Claim 14 (Currently Amended): A voice activated control or navigation system for in car use, the system comprising an automatic speech recognition system comprising a decoder for determining one or more candidate text unit concatenations according to a predetermined criterion and which correspond to a speech segment, the decoder comprising:

a processor arranged to receive a sequence of feature vectors corresponding to the speech segment;

the processor arranged to map with different likelihood values the feature vectors to sequences of nodes in a decoding network, every sequence representing a concatenation of text units;

the processor arranged to determine one or more candidate node sequences in the decoding network corresponding to the candidate text unit concatenations by implementing a dynamic programming token passing algorithm in which each token corresponds to a node and is associated with a number of text unit concatenations and likelihood values for these concatenations, wherein the plurality of candidate text unit concatenations in a token are the text unit concatenations with [[the]] N-best likelihood values;

tokens from different nodes that are to be passed to a common node are combined to generate a new token corresponding to the common node, said new token including a pointer to a word history structure that includes

pointers to text unit concatenations from previous tokens of different nodes, and offsets indicating a difference in maximum likelihood scores between the text unit concatenations from the previous tokens; and

the processor is further configured to delay a merging of the text unit concatenations in the new token to determine the N-best likelihood values until an end of the speech segment and output the one or more candidate text unit concatenations corresponding to the speech segment.

Claim 15 (Currently Amended): A method, performed by a processor, of decoding for determining a plurality of candidate text unit concatenations according to a predetermined

criterion and corresponding to a speech segment in an automatic speech recognition system, the method comprising:

receiving, at the processor, a sequence of feature vectors corresponding to the speech segment;

mapping with different likelihood values the feature vectors to sequences of nodes in a decoding network, every sequence representing a concatenation of text units;

determining, at the processor, one or more candidate node sequences in the decoding network corresponding to the candidate text unit concatenations by implementing a dynamic programming token passing algorithm in which each token corresponds to a node and is associated with a number of text unit concatenations and likelihood values for these concatenations, wherein the plurality of candidate text unit concatenations in a token are the text unit concatenations with [[the]] N-best likelihood values;

combining tokens from different nodes that are to be passed to a common node to generate a new token corresponding to the common node, said new token including a pointer to a word history structure that includes

pointers to text unit concatenations from previous tokens of different nodes, and

offsets indicating a difference in maximum likelihood scores between the text unit concatenations from the previous tokens;

delaying a merging of the text unit concatenations in the new token to determine the N-best likelihood values until an end of the speech segment; and

outputting the plurality of candidate text unit concatenations corresponding to the speech segment.

Claim 16 (Currently Amended): A method according to claim 15 further comprising merging said new token ~~having said identifier~~, the text unit concatenations of said previous tokens being associated with said merged token dependent on their corresponding likelihood values.

Claim 17 (Currently Amended): A method according to claim 16 wherein said merging is only delayed if the new token has a likelihood value below a delay-merge threshold.

Claim 18 (Original): A method according to claim 15 further comprising pruning tokens having likelihood values below a prune threshold.

Claim 19 (Canceled).

Claim 20 (Previously Presented): A method according to claim 15 wherein the tokens are additionally associated with a number of category markers each corresponding to said text unit concatenation, each category marker being associated with one of a plurality of categories, such that the plurality of candidate text unit concatenations in a token are the text unit concatenations with the best likelihood values in said plurality of categories.

Claim 21 (Original): A method according to claim 20 wherein the plurality of candidate text unit concatenations are the text unit concatenations with the N-best likelihood values in each said category.

Claim 22 (Original): A method according to claim 15 wherein the multiple text unit concatenations associated with each token are used to allow a statistical language model score to be added to the likelihood values associated with said text unit concatenations.

Claim 23 (Original): A method according to claim 15 wherein the dynamic programming token passing algorithm is a Viterbi algorithm.

Claim 24 (Original): A method according to claim 15 wherein the dynamic programming token passing algorithm is a Baum-Welch algorithm.

Claim 25 (Original): A method according to claim 15 wherein the tokens and the text unit concatenations are stored in logically separate memories, and wherein a logically separate list data-structure is used to associate tokens with their text unit concatenations or identifiers and corresponding likelihood values.

Claim 26 (Currently Amended): A method, performed by a processor, of automatically recognizing speech comprising a method of decoding for determining a plurality of candidate text unit concatenations according to a predetermined criterion and corresponding to a speech segment in an automatic speech recognition system, the method comprising:

receiving, at the processor, a sequence of feature vectors corresponding to the speech segment;

mapping with different likelihood values the feature vectors to sequences of nodes in a decoding network, every sequence representing a concatenation of text units;

determining, at the processor, one or more candidate node sequences in the decoding network corresponding to the candidate text unit concatenations by implementing a dynamic programming token passing algorithm in which each token corresponds to a node and is associated with a number of text unit concatenations and likelihood values for these concatenations, wherein the plurality of candidate text unit concatenations in a token are the text unit concatenations with [[the]] N-best likelihood values;

combining tokens from different nodes that are to be passed to a common node to generate a new token corresponding to the common node, said new token including a pointer to a word history structure that includes

pointers to text unit concatenations from previous tokens of different nodes, and

offsets indicating a difference in maximum likelihood scores between the text unit concatenations from the previous tokens;

delaying a merging of the text unit concatenations in the new token to determine the N-best likelihood values until an end of the speech segment; and

outputting the plurality of candidate text unit concatenations corresponding to the speech segment.

Claim 27 (Currently Amended): A computer storage medium including processor control code, which when executed by a processor performs a method of decoding for determining a plurality of candidate text unit concatenations according to a predetermined criterion and corresponding to a speech segment in an automatic speech recognition system, the method comprising:

receiving a sequence of feature vectors corresponding to the speech segment;

mapping with different likelihood values the feature vectors to sequences of nodes in a decoding network, every sequence representing a concatenation of text units;

determining one or more candidate node sequences in the decoding network corresponding to the candidate text unit concatenations by implementing a dynamic programming token passing algorithm in which each token corresponds to a node and is associated with a number of text unit concatenations and likelihood values for these concatenations, wherein the plurality of candidate text unit concatenations in a token are the text unit concatenations with [[the]] N-best likelihood values;

combining tokens from different nodes that are to be passed to a common node to generate a new token corresponding to the common node, said new token including a pointer to a word history structure that includes

pointers to text unit concatenations from previous tokens of different nodes, and

offsets indicating a difference in maximum likelihood scores between the text unit concatenations from the previous tokens;

delaying a merging of the text unit concatenations in the new token to determine the N-best likelihood values until an end of the speech segment; and

outputting the plurality of candidate text unit concatenations corresponding to the speech segment.